



NEW JERSEY

“Waterfowl and shorebird populations have increased dramatically,” noted Paul McCouch of Eagle Manor Farm following the restoration of 50 acres of estuarine wetlands and 23 acres of uplands on his Salem County property.

Mr. McCouch is one of the hundreds of landowners in New Jersey who have joined with the U.S. Fish and Wildlife Service to restore fish and wildlife habitat on their lands. Through its innovative **Partners for Fish and Wildlife Program**, the Service provides technical and financial assistance to help landowners like Mr. McCouch restore important fish and wildlife habitat in their own backyard.



Black duck

Introduction and General Description

The inception of the Partners for Fish and Wildlife Program in New Jersey began in 1991 and has been growing at a steady pace ever since. In New Jersey the program has focused on restoring several types of habitats including wetlands, uplands, and riparian (streamside) areas. The Partners for Fish and Wildlife Program is successful in New Jersey because it is a pro-active, voluntary cost-share program that builds on the strength and interest of committed individuals and organizations to accomplish shared conservation goals.

New Jersey Activities

- U Wetland restoration
- U Grassland restoration
- U Riparian fencing
- U Riparian planting
- U Bioengineering
- U Restoration of threatened and endangered species habitat
- U In-stream restoration
- U And other activities.

Habitats of Special Concern

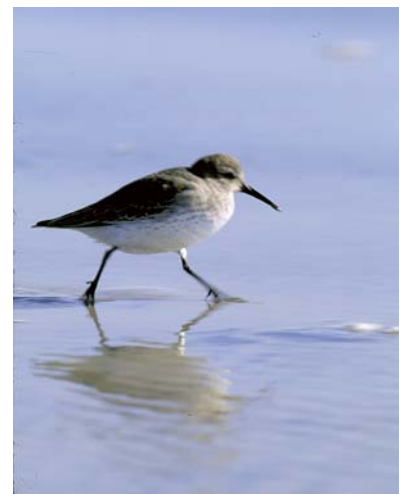
Currently, we are focusing restoration of fish and wildlife habitat in the following regions: Delaware Bay, Pinelands, Highlands, Barnegat Bay, and within the watershed of the five National Wildlife Refuges located in New Jersey. In addition, the Partners Program has worked with other groups to clear invasive species from threatened bog turtle habitat and stabilized eroding streambanks to restore water quality in threatened swamp pink (an aquatic plant) habitat. The Program concentrates on constructing these projects through a wide variety of funding sources, with a typical cost of \$5,000 to \$10,000 per project.

Threats

Lost Habitats

New Jersey annually loses about 10,000 acres of rural land to development. Much of this "lost" land becomes piecemeal development (suburban sprawl). Many of the State's natural

resources have been greatly diminished or degraded as the landscape has changed to provide for agriculture and urban development. New Jersey has lost more than half of its wetlands, some 584,000 acres. In addition, numerous dams continue to block fish movement, miles of stream are channelized, and numerous wetlands remain grid ditched from former mosquito control activities. As these areas changed, so did the fish and wildlife populations that relied on them; leading to declines



Sanderling

in waterfowl, grassland nesting birds, anadromous fish, and forest dependent species.

Conservation Strategies

Wetlands

The focus on wetlands is the result of the importance that these areas play in the lives of so many Federal trust resources, such as migratory birds and anadromous fish. Restoration in estuarine (brackish) wetlands is focused on eliminating invasive species such as common reed (*Phragmites australis*) and restoring tidal flows to disturbed wetlands. Restoration in freshwater wetlands focuses on restoring hydrology to formerly drained wetlands and restoring native plant diversity. For example, drainage tile is broken and small berms and ditch plugs are constructed to keep the water from draining off the site. In addition, wetland restoration can include planting a diverse array of beneficial wetland plants; creating micro-topography (little hills and swales); establishing groups of small seasonal wetlands; and, restoring important upland buffers adjacent to the wetland. The cost for this restoration averages about \$850 per acre.

Wetland restoration projects have focused in the Delaware Bay, Great Egg Harbor River, Mullica River, and the Upper Delaware



6-acre wetland restoration.

River watersheds. The Delaware Bay beaches and marshes are critical to millions of shorebirds during spring and fall migration. The Barnegat Bay and adjacent Atlantic coast tributaries support most of the wintering Atlantic Brant on the Atlantic Coast. The Upper Delaware River Ridge and Valley Province provides important habitat for raptors and grassland nesting birds. In addition, New Jersey has five National Wildlife Refuges operating throughout these focus areas.

Uplands

The decline of grassland nesting species such as bobolink and eastern meadowlark is directly correlated with the decline of grasslands in the Northeast. The Partners Program in New



An upland reforestation project in progress.

Jersey has lead the way by obtaining the first native grass seed drill (i.e., custom-built seed planter that can be pulled behind a tractor) to work on private lands in the State. The Partners Program now has two grass drills operating within the State to establish native warm-season grasslands. Other grassland management techniques include mowing, burning, planting both warm-season and cool-season grasses, and removing invasive species. The Partners Program also implements reforestation

projects particularly in areas where forest areas have been fragmented by development or agriculture. Costs for this work averages about \$400 per acre.

Streams and Riparian Areas



Streamside fencing at a dairy farm.

Streams and riparian (streamside) areas support fish, waterfowl, shellfish, amphibians and many other species comprising a diverse aquatic community. One restoration technique that is cost effective and valued by natural resource advocates, as well as farm groups and landowners, is streambank fencing. The Partners Program purchased equipment and provided labor to protect streams from grazing livestock. Along with sediment and nutrient reduction in the stream, excellent habitat is provided for both fish and wildlife. The landowner benefits from having a quality fence to use as part of a rest-rotation grazing system that allows the profitable yet wildlife friendly use of the land.

In addition, the Partners Program reestablishes riparian buffers through tree and shrub planting on farms. Many riparian areas of New Jersey are mowed grass to the river or stream edge. These wooded riparian buffers provide critical wildlife habitat and can

drastically improve water quality through erosion control, nutrient retention, and cooler summer water temperatures, which is important in trout production waters.



Installation of bioengineering stream bank erosion controls.

In-stream work concentrates on the concept of natural channel design that reduces sediment, improves fish and wildlife habitat and cost-effectively creates a stable stream. In addition, this type of restoration provides habitat and cover in streams for fish. In-stream projects typically cost between \$20 and \$50 per linear foot of restored stream, depending on the restoration requirements.

Invasive Species

Common reed, while native in origin, is believed to have cross-bred with a European genotype making it more invasive and aggressive. Common reed dominates many wetlands along the Delaware Bay and Atlantic Coast Bays. This invasive species



A prescribed burn to control common reed.

forms dense uniform stands reducing fish and wildlife use of the wetlands and altering the water regime and nutrient exchange of estuarine wetlands. The Partners Program has worked with landowners to control this invasive species through limited herbicide application, burning, and hydrologic modifications to encourage tidal flooding of the salt marsh. The hydrologic modifications through the use of ditch plugs and open marsh water management are critical to discouraging the return of common reed and encouraging the reestablishment of beneficial salt marsh vegetation. The Partners Program has been successful at reducing the coverage of common reed and restoring fish and wildlife use of degraded salt marshes.

Purple loosestrife, a European wetland plant, has invaded many wetlands in northern New Jersey to the point of being the dominant plant in many wetlands. This plant out competes most native species, reducing the plant diversity and keeping native wetland plants that provide important food and cover for wildlife from proliferating. The Partners Program has worked with the New Jersey Department of Agriculture to release beetles that feed only on loosestrife, which stresses the plant and reduces its vigor so native plants can better compete. The Partners Program is also working with the New Jersey Endangered and Nongame Species Program to control purple loosestrife on private lands that provide habitat for the federally threatened bog turtle.

Cost for invasive species projects have ranged from \$200 to \$1,000 per acre.

Outdoor Classrooms

The Partners Program has worked with schools, county parks, and municipal parks in New Jersey to restore wetlands, grasslands, and riparian areas that are used in conjunction with environmental educational programs. In addition, Partners staff frequently provide presentations and "hands on" restoration at these sites to teach about the biological values of these habitats. The Partners Program leverages funds with many other sources to implement these projects, which typically cost about \$5,000 per project.

Farming for Wildlife and Profit

In addition to habitat restoration, the Partners Program also improves the effectiveness of the conservation provisions of the Department of Agriculture by providing the technical expertise needed to evaluate which projects are best suited for fish and wildlife, demonstrating as well as recommending management and restoration techniques and providing data that lets the Federal funds be used most effectively. This relationship combines the more extensive funding of the Department of Agriculture with the biological expertise of the Partners Program in order to benefit the public.

The Partners Program recognizes that agricultural lands are more valuable to wildlife than urban development and works with agricultural producers, the Natural Resource Conservation Service,

and the State of New Jersey to keep farms both economically and biologically productive. The special expertise of Partners staff provides regular and important technical assistance to the USDA in the



A fish ladder on the Cooper River.

administration of the various USDA conservation programs.

Partners

Natural Resources Conservation Service
Farm Service Agency
U.S. Coast Guard
South Jersey Resource, Conservation & Development
North Jersey RC&D
National Fish and Wildlife Foundation
New Jersey Department of Environmental Protection
New Jersey Department of Corrections
New Jersey Department of Agriculture
Nanticoke Lenni-Lenape Indians of New Jersey
Ramapough Lenape Nation
Atlantic County Department of Parks and Recreation
Camden County Parks Department
Morris County Public Works
Somerset County Park Commission
Ocean County Planning Department
Warren County Fair Grounds
Ocean County Mosquito Extermination Commission
Cape May County Mosquito Control Commission
Hackensack Meadowlands Commission
Cape-Atlantic SWCD
Gloucester SWCD
Hunterdon SWCD
City of Port Republic
Borough of Ogdensburg
Bedminster Township
Bloomfield Board of Education
Mendham Township
Berkeley Township
Greenwich Township

Tewksbury Township
Old Pine Farm Natural Land Trust
South Jersey Land Trust
Natural Land Trust
Harding Land Trust
Phillipsburg Riverview Organization
Ridge and Valley Conservancy
Whittemore Wildlife Sanctuary
Keep Conservation Foundation
Fish America Foundation
Friends of Rockaway River
Friends of Clarks Pond
Boy Scouts of America
New Jersey Conservation Foundation
The Nature Conservancy
Ducks Unlimited
Delaware Riverkeeper
Audubon Society
Trout Unlimited
National Turkey Federation
AmeriCorps
New Jersey Youth Corps
Logan Generating Company
IntraWest, Inc.
Atlantic City Country Club

Accomplishments



Landowner receiving a Certificate of Appreciation.

- < 465 landowners have been visited by Partners staff
- < 158 landowners have had projects completed
- < 3,856 acres of wetland habitat restored
- < 339 acres of upland habitat restored
- < 12 miles of riparian habitat restored
- < 12 miles of stream opened for fish passage
- < 2 educational facilities have restored wildlife habitats and are used as outdoor classrooms

Future Needs

< Restore or enhance 150,000 acres of salt marsh wetlands, primarily in the Delaware Bay and Atlantic Coast Bays to improve habitat for waterfowl, shorebirds and wading birds. Commercial fishing, sport fishing, bird watching and other uses that directly benefit from wetland restoration, generate \$40 million annually in the Delaware Bay area.

< Restore or enhance 10,000 acres of uplands through grassland restoration or reforestation particularly in the Cape May Peninsula, to provide critical stopover habitat to migrating birds.

< Restore, protect, and enhance 2,000 miles of stream habitat, particularly in the Highlands Region to improve trout production waters.

< Provide access to 1,000 miles of riverine habitat (areas along or within large rivers), for anadromous (migratory) fish along the Delaware and Atlantic Coast Bays by removing fish barriers or constructing fish ladders.

< Improve federally listed species habitat in New Jersey, particularly for the federally threatened bog turtle and swamp pink (New Jersey has more than 70 percent of the known swamp pink sites).

< Work with 100,000 private landowners across New Jersey to improve habitat on their property.



Before: Drained wetland.



After: Restoration of 2 acres of wetland.



Great egret

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July 2001

Partners for Fish and Wildlife

New Jersey Location Map

